

Hobbies

WEEKLY

CONTENTS

	Page
An Ironing Table	33
Metal Paper Holder	35
Model Railway Hints	36
Woodturning	37
Bamboo Novelties	38
A Specimen Case	39
Orange Box Uses	40
Keeping Guinea Pigs	41
A Simple Bird Table	41
Fishing for Dace	42
A Wire Straightener	42
Growing Miniature Trees	43
A Toy Model Shop	44
Photographic Alphabet	46
Three Home Gadgets	47

DESIGN SHEET FOR
PULL-ALONG CARAVAN
TOY

October 18th, 1950

Price Fourpence

Vol. III No. 2868

A SIMPLE FOLDING IRONING TABLE

A VERY handy article this, most useful to the housewife when the time arrives to do the family linen. It folds flat and occupies little space, but when opened out for work, stands very steady and firm. It is quite a simple job of woodwork, one within the scope of any amateur carpenter.

The folding leg parts are shown grouped together in Fig. 1. The inner legs are made up first, and are drawn at (A). Cut these from red deal if possible, to the length given. Cut the top cross-bar to length and fix with screws. It will be seen that this pair of legs splay outwards, so space them apart at the bottom to outside measurement of 1ft. 1in. and keep them so fixed until the diagonal braces are fitted, then free them. A spare strip of wood, nailed across them at the bottom will fix them temporarily. This should be done before the top bar is screwed across.

Angle of Legs

Where shown by the short dotted lines across, drill $\frac{1}{2}$ in. holes through for rivets, which afterwards hold the two pairs of legs together, like those of a deck chair. Now trim the ends, as shown at (B) and (C), about 20 degrees being sawn off each for the legs to bed flat on the floor. Note the direction of these cuts—this is important.

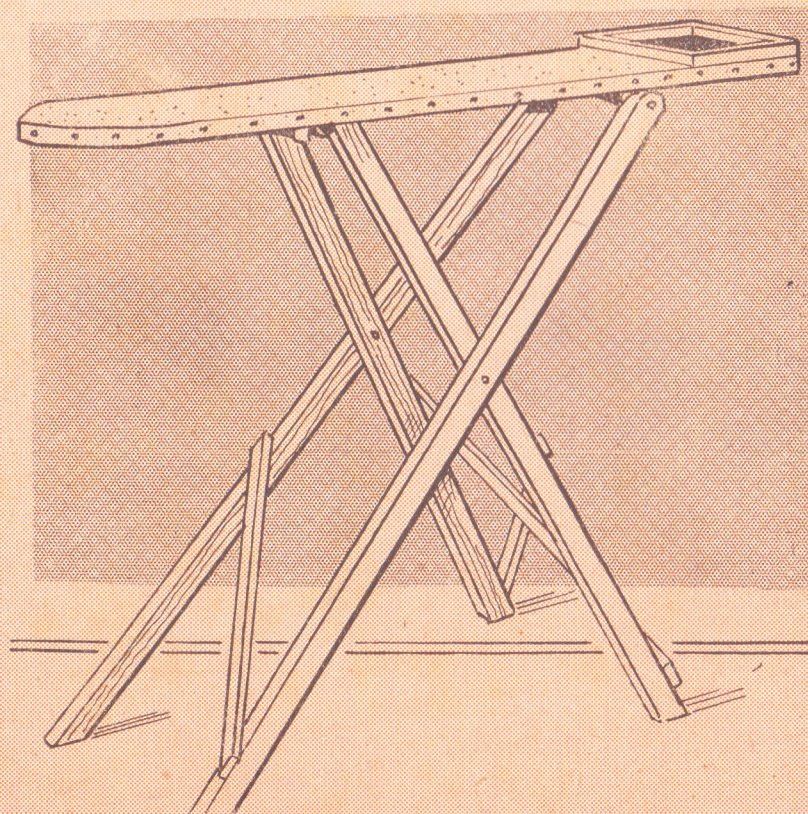
The diagonal bars are cut from $\frac{1}{2}$ in. by $\frac{1}{2}$ in. wood, and nailed across approximately where shown in the drawing, on the side opposite to the cross-bar.

The outer legs (D) are now cut. These are rounded at their top ends and a hole bored through at $\frac{1}{2}$ in. down from the top. The bottom ends are cut at a similar angle to the inner legs.

At the distance down from the top shown, bore $\frac{1}{2}$ in. holes for the rivets. Now fix these legs to the inner pair with iron $\frac{1}{2}$ in. rivets, with washers outside. Do not clench the rivets too tightly, as a

little freedom is necessary to allow the legs to fold up and open freely.

Cut a cross-bar (E) from $\frac{1}{2}$ in. by 2in. deal, and approximately 7ins. long. The actual distance should be measured



All correspondence should be addressed to The Editor, Hobbies Weekly, Dereham, Norfolk.

across where the holes in the tops of the legs come, and there should be about $\frac{1}{8}$ in. clearance each end for the legs to swing without rasping against the bar. A couple of $1\frac{1}{2}$ in. round-headed screws, stout ones, are to be used as pivot screws here.

The holes for these to enter the ends of bar (E) are bored $\frac{3}{8}$ in. up from the bottom edge of the bar. Fix the legs to this with the screws, not too tightly. While the legs are still folded flat, nail a single diagonal brace across the outer ones. This is plainly shown in the general view of the article.

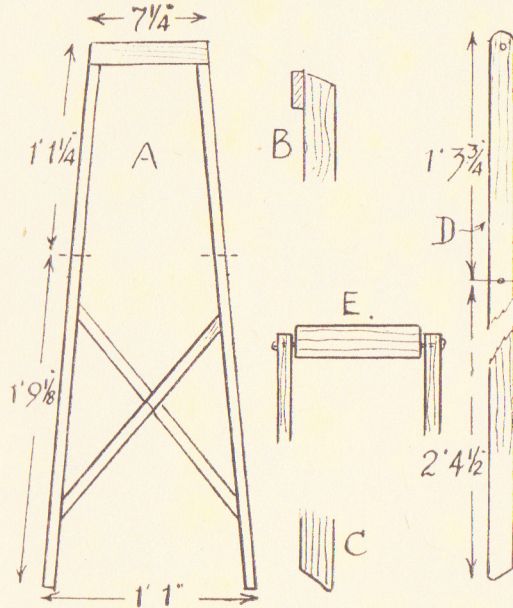


Fig. 1 - Shape and dimension of legs, with details

The ironing board, Fig. 2, is cut to the shape shown from a single board of $\frac{3}{4}$ in. deal. Where shown at (F) screw across a piece of wood, $\frac{3}{4}$ in. thick and $1\frac{1}{2}$ ins. wide, just 7 ins. in length. The bar (E) to which the outer legs are pivoted, is screwed across also, where shown.

Owing to the width of these pieces of wood, to avoid using too long screws, a good plan is to bore $\frac{1}{8}$ in. holes first, some 1 in. deep, then to continue

through the wood with a hole large enough to allow the screw to be pushed through. Screws $1\frac{1}{2}$ ins. long can then be used for fixing, the heads, of course, sinking in the larger holes.

The table can now be opened out and any necessary tightening of the rivets or screws carried out. This should not be overdone, or the table instead of standing firm may tend to wobble. Enough freedom only is required to enable the table to be folded up or opened out without strain.

A metal spring catch is advisable, to keep the table, when opened out, in position. A simple affair in this, and sketched in detail (G) Fig. 3. It is a short piece of steel or springy brass, screwed

At the square end of the ironing table glue and nail four $\frac{3}{8}$ in. wide strips of wood to make a frame in which the iron

CUTTING LIST

Inner legs (2) $\frac{3}{4}$ in. by $1\frac{1}{2}$ ins. by 2 ft. 10 $\frac{1}{8}$ ins.
Top bar $\frac{3}{4}$ in. by $1\frac{1}{2}$ ins. by 7 $\frac{1}{2}$ ins.
Diagonal braces (2) $\frac{3}{4}$ in. by $\frac{3}{4}$ in. by 1 ft. 6 ins.
Outer legs (2) $\frac{3}{4}$ in. by $1\frac{1}{2}$ ins. by 3 ft. 8 $\frac{1}{8}$ ins.
Diagonal brace $\frac{3}{4}$ in. by $\frac{3}{4}$ in. by 1 ft. 8 ins.
Bar (E) $\frac{3}{4}$ in. by 2 ins. by 7 ins.
Table $\frac{3}{4}$ in. by 8 $\frac{1}{2}$ ins. by 3 ft. 9 ins.
Bar (F) $\frac{3}{4}$ in. by $1\frac{1}{2}$ ins. by 7 ins.

can rest when not in use. This is shown at (H) and a piece of asbestos sheet is nailed to the table, inside the frame, for the iron to sit on without fear of burning the wood.

The completed table is then covered

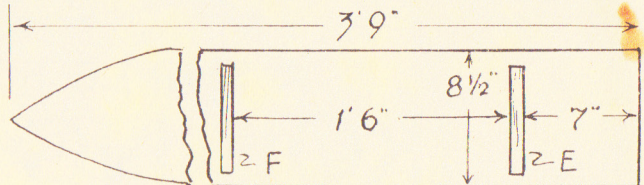


Fig. 2 - The ironing board, with position of cross pieces

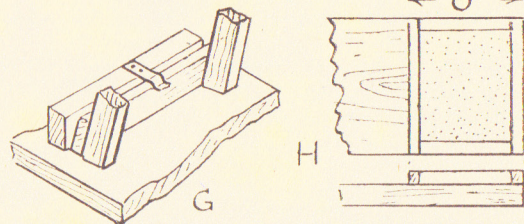


Fig. 3 - Holding clip for legs and the iron-rest

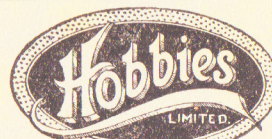
to the bar (F) and with its free end bent to a curve to slip over the top cross-bar attached to the inner pair of legs, and which butts up against bar (F) when the table is open.

The detail shows its shape clearly, and it should not be difficult to bend the metal to shape, and fix it in place. The top edge of cross-bar, over which the spring fits, should be rounded off neatly to allow it to pass under the spring easily.

with a thickness of old blanket or close woven canvas, with an outer cover of white calico tacked round the edges. The article can be left plain, the usual practice, or varnished as preferred, and when completed, will make a welcome addition to the household equipment. A comparatively small quantity of wood is required for making, and a cutting list given will show the sizes, etc., of all parts needful.

Our Free Design Supplement for CARAVAN TOY

THIS novelty can be built in wood and painted in bright colours quite easily from the full size patterns on the large instruction sheet presented with this issue. It is made the more simple by the Kit of Material (No. 2863) which contains planed wood of correct thickness for all parts. Obtainable for 4/2 from any Hobbies Branches sent post free for 5/- from Hobbies Ltd., Dereham, Norfolk.



BRANCHES

LONDON

78a New Oxford St., W.C.1
(Phone MUSeum 2975)
87 Old Broad Street, E.C.2
(LONDON Wall 4375)
117 Walworth Road, S.E.17

GLASGOW

326 Argyle Street
(Phone CENTral 5042)

Head Office & Factories—HOBBIES LTD., DEREHAM, NORFOLK

MANCHESTER

10 Piccadilly
(Phone CENtral 1787)

BIRMINGHAM

14 Bull Ring

SHEFFIELD

4 St. Paul's Parade

LEEDS

10 Queen Victoria Street
(Phone 28639)

HULL

10 Paragon Square

SOUTHAMPTON

25 Bernard Street

BRISTOL

30 Narrow Wine Street
(Phone 23744)

Try your hand at sheet metal cutting in this PAPER HOLDER

HOW many readers have tried their hand at pierced metal work? It is, in many ways, no more difficult than wood fretwork, and provides a pleasant change of hobby. The article illustrated is a simple example of such work, comprising a newspaper holder, and letter rack below, mounted on a wooden backboard. It is a useful article and prevents the daily paper lying about the room, and the mantelpiece being made untidy with letters stuffed behind the ornaments.

Sheet metal can be easily cut with Hobbies metal-cutting blades, which are used in the usual way in a fretwork handframe or machine.

The Metal

A medium thickness of metal is advised, strong enough for the purpose and not too difficult to cut. Somewhere about 18 S.W.G. would be about suitable for the job. Quite a small piece is required, and brass, copper or aluminium would all be fairly easy to cut. Special metal cutting blades are required for sawing metal, having different shaped teeth for the work to those used for wood. These can be employed in the ordinary frame, however.

A half pattern for the shaped pieces is given in Fig. 1, drawn over 1in. squares.

MATERIAL REQUIRED

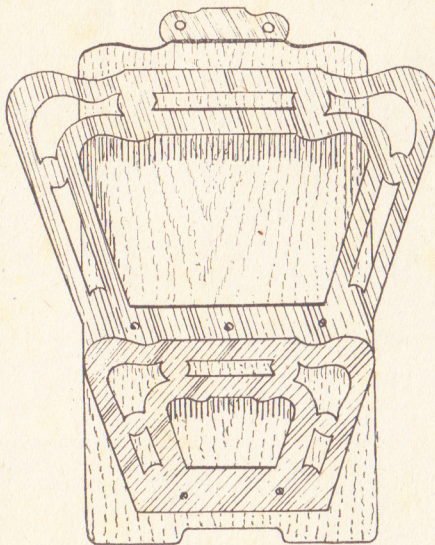
- 1 panel 18 S.W.G. metal—6ins. by 9ins.
- 1 panel wood— $\frac{1}{2}$ in. or $\frac{3}{4}$ in. thick. 6ins. by 10 $\frac{1}{2}$ ins.
- 5 round-headed brass or copper screws, $\frac{1}{2}$ in.
- Metal-cutting saws.
- Fixing screws.

Copy these squares full size on to thin paper, and gum down to the metal. Drill the necessary small holes for entry of the saw at the most convenient places, then saw out the openings in the design.

Sawing is much the same as for wood, but slower, also it is wise to avoid overheating the blade by too vigorous work, it may snap. Do not press the saw forward too hard, rather let it 'feel' its way, as it were, and when it gets hot, cease work for a minute or so to cool it down a little.

Three Parts

With the openings all sawn out, cut along the outlines, leaving the outside outline last. The perforated panel of metal will then be separated into three parts. The largest will be for the front of the paper rack, the next in size for the letter rack, while the smallest will serve for a plate to be screwed to the rear of the backboard, and serve to hang the rack to the wall. No waste here at all, except, of course, the small pieces cut out to make the design, which can,



possibly, be used up some time, when small pieces of metal may be needed.

At the bottom of both rack fronts, on a line $\frac{1}{4}$ in. up, drill holes for screws to fix the fronts to the backboard, also drill holes in the wall plate piece, both for screwing it to the backboard, and to the wall. Lay the parts in hot water to soak off the design. When dry, smooth up the edges of the fretted openings and out-lines with a file.

Back Shape

The backboard, Fig. 2, can be cut to the shape given from any suitable wood available, not less than $\frac{1}{2}$ in. thick. This, or $\frac{3}{4}$ in. thickness in oak would do very nicely. If a piece of commoner wood has to serve, such as deal or even decent box wood, then a coat of enamel would hide its texture and make it look presentable after all.

With the backboard nicely smoothed and cleaned up, two strips of wood must be prepared, to which the metal fronts can be screwed. These are planed on their outer front edges to a bevel to fix the metal fronts at an angle, as seen in the side view, Fig. 3.

These strips are $\frac{1}{2}$ in. wide, and vary in thickness, as shown

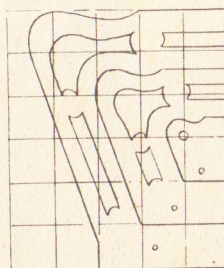


Fig. 1 - Back decoration

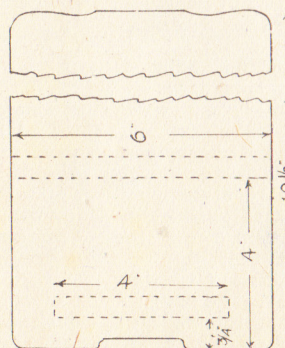


Fig. 2 - Wood backboard

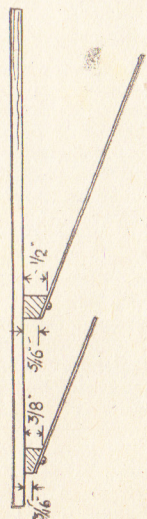


Fig. 3 - Side view

in the drawing. The top one goes the full width of the board, the bottom one is just 4ins. long. Glue them both to the backboard in the position shown in Fig. 2, by dotted lines. The fronts are then partially fixed with $\frac{1}{2}$ in. round-headed brass screws. Be careful, when drilling these screw holes, to use a size of drill suitable to the screws.

Now remove the metal fronts. Go over them back and front with fine emery cloth first, then with flour emery. Polish up with rotten stone and water or rouge, until the surface is quite satisfactory. Avoid, after this treatment, touching the polished surfaces with the hands.

Lacquer Finish

The metal parts should then be lacquered. Both hot and cold lacquers are available, the cold lacquer is applied to the metal as it is, or slightly warmed. The hot lacquer should have the metal surface made quite warm before being applied. A soft brush is used for lacquering, and care must be taken to avoid any dust getting on the work while the lacquer is still tacky.

The backboard can be stained and varnished according to the wood it is cut from. If it is to be enamelled, give it one or two coats of paint first to impart a body to the work, then, when dry, lightly rub over with a piece of worn glasspaper and dust off before applying the final coat of enamel, or high gloss paint. Almost any colour may be used, if a preference is possible, then a green or red colour would show up the polished metal well, also black if aluminium is employed for the metal parts.

The article is fixed to the wall, preferably with two screws, instead of one, in order to prevent it tilting to one side when papers and letters are inserted or withdrawn.

Your lay-out will be improved by following these MODEL RAILWAY HINTS



A typical single-line through station

MOST model railway enthusiasts seem to pay much more attention to the design of their locomotives and rolling-stock than they do to the planning of station layouts, and the general realism of a model line can suffer badly through this lack of care.

It must not be imagined that the mere laying of lots of track, points, crossings and junctions will produce a 'railway-like' model—on the contrary, although a showy layout may be made in this way, it will be devoid of any semblance to the real thing.

In a very small layout there is always the desire to incorporate all the various details which go to make up a railway, but such masterful completeness is not generally possible, particularly on a small line.

By crushing—or attempting to crush—too much track into a small area, station platforms become ridiculously shortened so they cannot accommodate a train of any length. The inclusion of far too much built-up scenery also precludes the use of the space it occupies for the accommodation of track.

Allow for Growth

In short, a model line should never be planned with the idea of filling up as much of the area available as possible, but should be started by designing and eventually laying a simple plan and letting it grow gradually, increasing length of run and station platforms as opportunity arises.

If a continuous 'main line' design is contemplated, then it should be laid around the perimeter of the space available, allowing about 5ins. or 6ins. between the track and the baseboard edge. With such a layout of, say, 12ft. by 7ft., and of rectangular shape, there will not usually be found room for more than two small stations; one on each of the longer sides of the rectangle.

By the study of the diagram it will be seen that on a simple layout so designed a circuit of 32ft. can be incorporated; the station platforms being located on the 5ft. long straight sections. A curved section

travel without fear of derailment.

Station sidings can be added in each of the four corners, if desired, but if proper prototype practice is to be followed, these should always enter the main line by trailing points. Thus if the circuit is to be run in a clockwise direction, the station sidings should be located in the left-hand corner and the right-hand bottom corner of the layout. (They are shown in solid lines on the diagram.)

If desired these sidings can be lengthened by curving them round in the 6ins. space between the curved portion of the main line and the edge of the baseboard,

at each end 11ft. long will then still give that amount of separation needed to give the stations an isolated appearance. These curves are of 3ft. radius and will allow six-coupled engines and vehicles with long fixed wheelbases to

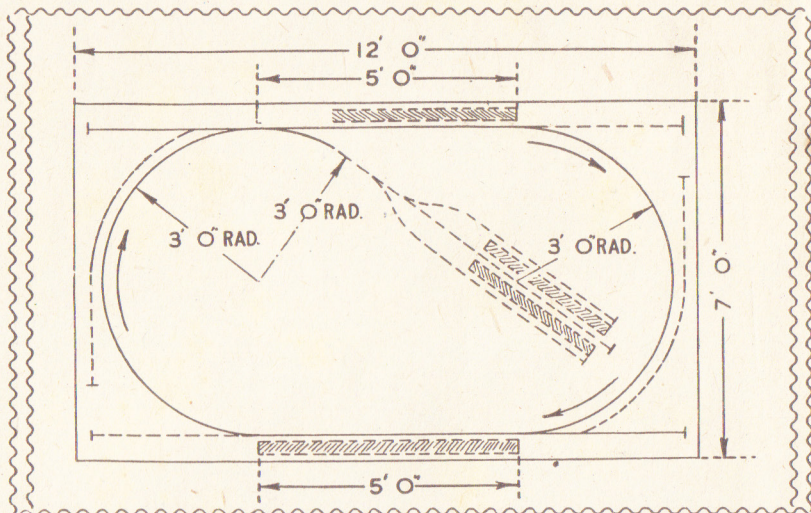
tank loco and a train of four bogie coaches will occupy about 6ft. of track, hence the platforms of each terminal station should be of this length at least. Twelve feet of the available layout length being thus occupied by stations, not much can be accomplished in less than about 40ft. of baseboard.

This inter-station run is the all-important thing to remember when designing any layout, and is one of the main consideration which cause model railway operational enthusiasts to follow 4mm. scale, instead of the 'O' gauge on which the previous calculations have been made.

Combination Type

A combination of the 'two through stations' with the 'terminal' type layouts can be arranged by placing a facing ('main-line') point at the entry to one of the through stations, taking a branch from thence to a small terminus located diagonally in the central area of the baseboard. Scenery should be suitably arranged to mask the terminus from both of the through stations, and buildings, fencing and walls can all play a part in giving each of the three stations an air of isolation.

It will be seen that by careful study, planning on paper, and construction, a small model railway can be made to



as shown by dotted lines; such sidings will then have accommodation for a short goods train or a 'local' train with its tank locomotive.

If, however, the layout is to be made from point to point, as would be the case if the space available is of a longer and narrower shape, then it is best to start in a small way, for it is rather difficult to plan on paper a really good operative system without a certain amount of trial and error.

It should be remembered that a small

simulate the real thing more perfectly—not only in appearance, but in operational possibilities.

The disadvantage of all model lines is well known to be the smallness of the radius of the track curves which space limitations impose, but even so, a great deal can be done to minimise this fault and to create the illusion of length and real railway atmosphere which is so ardently sought after by all lovers of the 'real thing'.

The first of a short practical series all about WOODTURNING

THE woodworker who does not try his hand at turnery is not getting the best from his hobby. Many fellows fight shy of lathe work, as they consider it both expensive and difficult to do, but actually turnery is very little more complicated than ordinary bench work. Once a few simple principles have been mastered, some really high-class work can be turned out easily and quickly.

Types of Machine

Obviously, some form of lathe is needed. Nowadays this piece of equipment may be rather expensive, but on the other hand it will give a lifetime of valuable service. A price list of Hobbies amateur's lathes is obtainable on request. (Twenty-five years ago Hobbies Ltd. were selling lathes at what now seem to be ridiculously cheap prices, but these machines are still giving their owners every satisfaction).

If a new lathe is out of the question, it may be possible to get hold of a sound second-hand model. Failing this again, the ingenious craftsman can soon rig up a 'bodger lathe' of the type described below.

Essential Parts

Lathes vary in size, layout, method of driving, and so on, but a front view of a typical simple machine is given at Fig. 1. This has a headstock (H) and a tailstock (T), each having a centre (C) between which the wood is held for turning. A movable tool-rest (R) can be moved along the top of the framework or 'bed'. Pulleys (P) are sometimes provided so that the lathe can be run from an overhead shaft, but the treadle (TR) is most commonly used as the driving force.

Other refinements may be added to the lathe, and mention of these will be made later.

The 'bodger lathe' is so-called because it is used by the 'boders'—skilled country craftsmen of parts of Buckinghamshire who still use this simple form of lathe which they use for turning furniture parts. A front view and end

elevation of such a lathe is given at Fig. 2.

Wood is used throughout for the making of this lathe. It has two long bottom rails, each of which carries a series of holes for about half its length. The head and tailstock are simply shaped pieces of stout wood, the latter having a hole drilled through its tongue so that by passing a bolt through it and through two appropriate holes in the rails, it can be held firm at any required distance from the headstock. In the centre of each wooden upright a steel nail is driven (at the junction of the dotted lines on the end-section), these being sharpened up and used as centres.

The instrument is fixed at a convenient height for working, and a springy pole is fixed horizontally about 4ft. above it. A cord comes from the end of this pole, passes once right round the piece of wood held between the centres, and passes down to a simple treadle. When the treadle is depressed, the wood spins forward, and when the foot is taken off the treadle, the wood turns back. Cutting is done as the wood spins towards the operator, and the tool is lifted away as the timber runs back.

Treading

In handling a bodger lathe, success is only possible if the treading is correct, and this statement is equally true of work done on the more modern lathe. Before trying any practical woodturning, therefore, it is advisable to have half-an-hour's practice at treading,

aiming at achieving a free and rhythmic movement.

The Cutting Tools

A few common woodworking tools have their uses in turnery, but certain special tools are also needed.

The actual cutting tools are known as 'scrapers', 'chisels', 'parting tools' and 'gouges'. These can normally be ob-

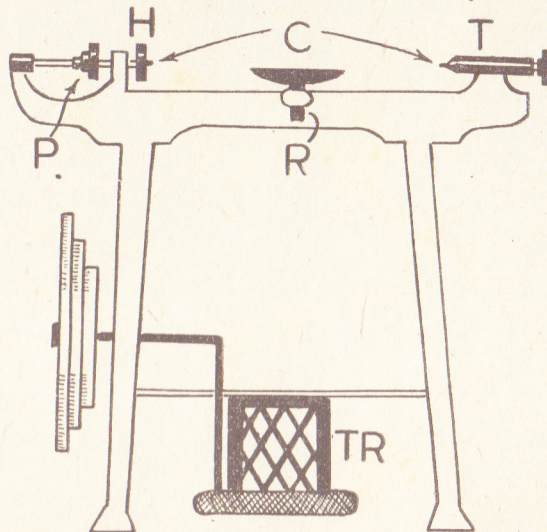


Fig. 1—A diagram of the main parts in all types

tained in various widths of blade from $\frac{1}{4}$ in. upwards, but the $\frac{1}{4}$ in., $\frac{1}{2}$ in. and $\frac{3}{4}$ in. sizes will probably be the most useful. At present they are in short supply for amateurs.

The scraper (A of Fig. 3) greatly resembles an ordinary woodwork firmer chisel; it is used for smoothing a rough surface in the manner to be described later. The chisel has a sloping cutting edge and is sharpened and ground on both sides (see B of Fig. 3).

The parting tool differs from the chisel in that it is V-shaped at the bottom, while the gouge has a half-round section; these tools are shown at (C) and (D) respectively of Fig. 3.

All these tools must be kept sharp.

(Continued foot of page 38)

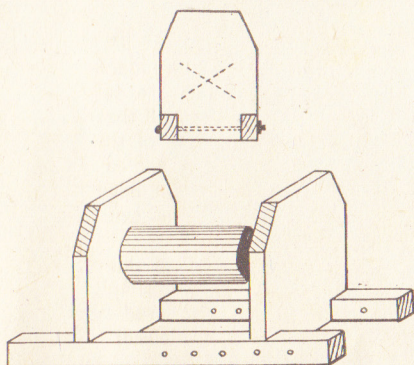


Fig. 2—A localized type of 'bodger' lathe

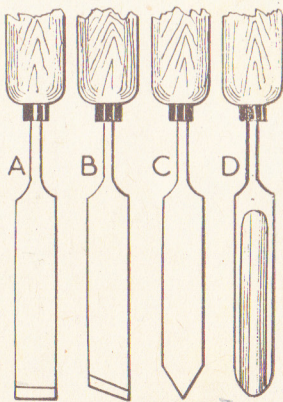


Fig. 3—The scrapers and cutters required

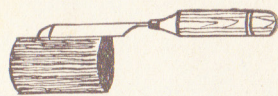


Fig. 4—Sharpening the gouge on a slip

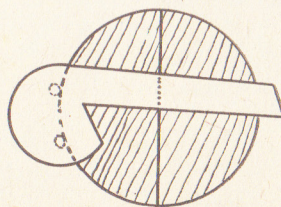


Fig. 6—Finding a centre

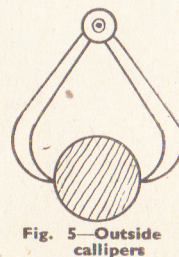


Fig. 5—Outside callipers

A few odd lengths of material will provide these BAMBOO NOVELTIES

THOUGH the bamboo curtain pole is practically extinct, there is still a use for these memories of the past. If rescued from the obscurity of lumber room or garden shed, they may be converted by the handyman.

It is a good plan to start with the pencil case, with which any small girl or boy will be delighted. On prodding a ruler down an open end of the pole, you will find there is an obstruction. This is a transverse wall which occurs at the same point as the outer raised ring. As these are found all along the pole we have a series of cylindrical boxes.

With a fretsaw cut off a section of the pole, leaving two transverse walls

the body of the case makes the lid. After glasspapering the other end wall, give the whole job a good polishing with furniture polish.

Pepper Shaker

The pepper shaker is made in a similar way, except that a piece is cut out between the two transverse walls to shorten it. A good overall length is 3ins. Use a fretwork drill for making the holes in the top and, of course, arrange them in a neat circle with one hole in the middle.

For the ash tray you need a $\frac{1}{2}$ in. slice from a seasoned tree branch. Glasspaper this very well, occasionally brushing out the wood dust from the end grain with an old dry tooth brush until an unbroken shining surface is shown on holding the branch slice in a reflecting light. Unless this is done varnish will show even minute roughnesses.

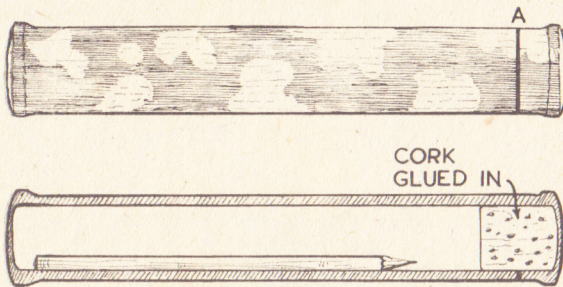
Next glue the slice of bamboo on to it and for the cigarette rest glue on a piece of elder, which is hollow within.

piece of $\frac{1}{2}$ in. twig (beech or oak) or dowel, and the finger ring a circle cut from bamboo.

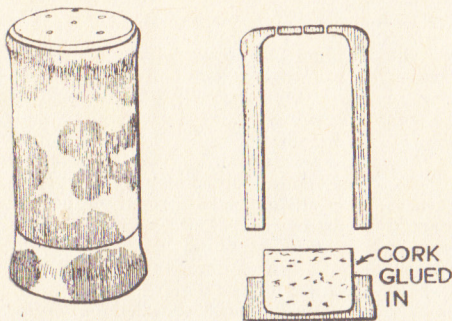
The bamboo pillar should be about 3 $\frac{1}{2}$ ins. long, with the slot and notches for the elevator cut on both sides of the bamboo. The slot can be cut in one operation by sawing down from the top. If you clamp the bamboo to your fret cutting table, you will find the notches easier to cut out. Use a fine saw and, if necessary, true them up with a rat tail file.

Now cut the hole in the top piece to take the candle. This job is best done with the fretsaw, too, first using the fret drill to make a hole for the saw. Glue all the pieces together and give the candlestick a thin coat of varnish.

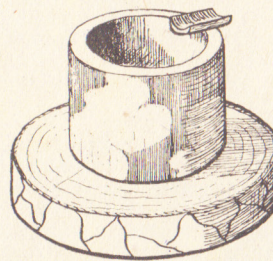
As there is enough material in the average curtain pole for several each of the novelties, it might simplify the old problem of what to give for birthday or Christmas presents, especially in these times when many things are so dear.



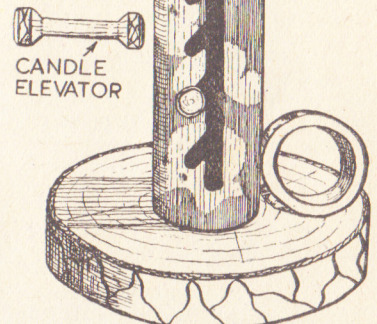
The pencil box complete and in section



A pepper pot showing glued cork stopper



A simple ash tray and base



A novel candlestick with elevator

intact. Next cut off one end in the position (A) in the diagram. The saw-cut should be made about $\frac{1}{2}$ in. from the end. Glasspaper the transverse wall flush and then glue in a cork. This, pressed into

A novelty on the candlestick is the elevator which may be pushed up a notch as the candle burns down. The base and top are $\frac{1}{2}$ in. branch slices well polished. The elevator is a whittled

From the remaining scraps of bamboo unusual napkin rings can be made, provided your pole happens to be wide enough internally to take a rolled-up table napkin. Cut these 1 $\frac{1}{2}$ ins. wide. (260)

Woodturning—(Continued from page 37)

and for this an ordinary oilstone and a carborundum slip are needed, the latter being a small shaped sharpening stone that can be held in the hand. Chisels and scrapers are sharpened in the same way as firmer chisels, but with the gouge, the bevel is first rubbed down on an oilstone (giving a slight rocking movement to keep the bevel even) and is then finished off on the edge of a carborundum slip, as shown on Fig. 4.

Callipers will be required for measuring the diameter of turned work.

Fig. 5 shows a pair of simple 'outside callipers' used for measuring external diameters. If any face-plate turning of bowls or cups is to be done at a later stage, 'inside callipers' will also be needed. These closely resemble outside callipers but have the points of the legs bent outwards.

The final item that might be mentioned is the 'centre' (shown at Fig. 6) used for finding the centre of a piece of round work. Such centres can be purchased or can be home-made from thin metal or

plywood. The shape can be seen from the drawing. On the underside of the instrument two pins are set in equidistant from the edge. If these pins are held against the edges of the wood in two separate places and a pencil is drawn along its straight edge, the two lines will cross in the centre of the wood.

In the next article of this series the use of the tools in simple turning exercises will be considered. (262)

(To be Continued)

The collector of shells, coins, rock etc., should make this 2-TRAY SPECIMEN CASE

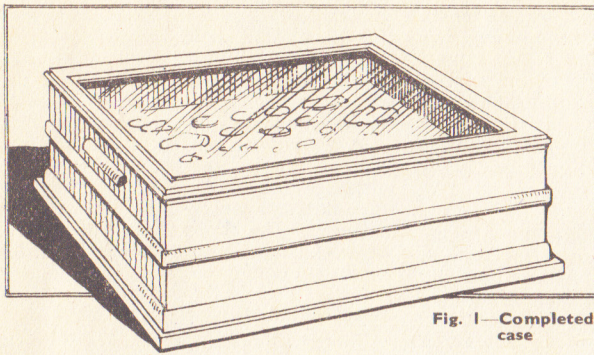


Fig. 1—Completed case

THE display case shown here is intended for specimens, which may consist of shells, butterflies, coins and various kinds of fossils etc. It is a departure from the usual kind of case, inasmuch that here there are two distinct cases so designed and arranged that one fits within the other, making for compactness and economy of space.

The body of the cases is constructed of $\frac{3}{4}$ in. soft wood simply butted together at the corners and screwed to a base. The outside surfaces of the cases are intended to be covered with Rexine or Pegamoid paper or any other suitable covering material.

White lining paper as used by paper-hangers is as good as anything and will help to show up well any exhibits. Each of the two cases will be treated independently, but it must be borne in

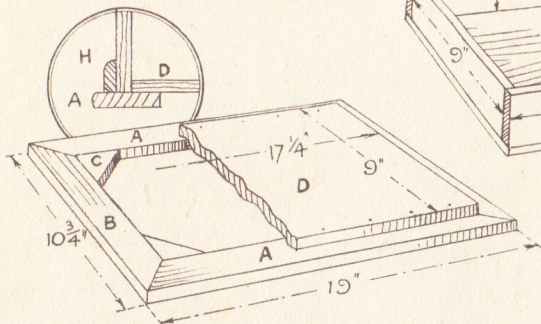


Fig. 2—Details of floor and base construction

mind that the body of each must be identical in size so they fit exactly one over the other.

When made and put together the cases will appear as Fig. 1, and here it will be seen the top one has plain wood handles attached to the ends for ease in lifting when the lower case has to be exhibited.

The base of the lower case should first be set out and made, and in Fig. 2 this is shown with also a section of the floor screwed to it. Cut two pieces as (A) and two pieces as (B) all to length shown, by 1 $\frac{1}{2}$ ins. wide by $\frac{3}{4}$ in. thick. Cut the mitres to 40 degrees on all the ends using a set

square for the purpose. Then cut four angle blocks as (C) and glue all the eight pieces together. On the top of them then glue and pin a panel of wood measuring 17 $\frac{1}{4}$ ins. by 9 ins. by $\frac{1}{2}$ in. thick. The whole base then should be well stiffened up and ready to take the sides and ends of the frame.

As both cases are identical in size, four rails 18 ins. by 3 ins., and four rails 9 ins. by 3 ins. and all $\frac{3}{4}$ in. thick may be cut and framed together as shown in Fig. 3. This illustration shows the upper case with floor (G) attached and flush with the sides and ends all round. The lower case, however, will not of course have a floor this being already supplied as (D) in Fig. 2.

To strengthen the base, as well as to add to the appearance, a member as (H) in the enlarged diagram in Fig. 2 is added all round and mitred at the corners. The four pieces are $\frac{3}{4}$ in. by $\frac{1}{2}$ in. in section and are glued in place. This member is seen again in the cross section through one side at Fig. 4.

The lower case, being glass-covered, the fillets to support the glass may next

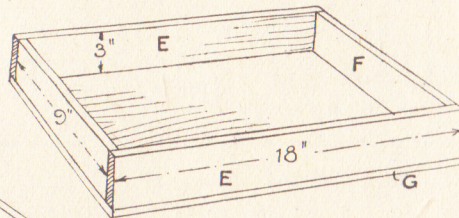


Fig. 3—Framework of the case

be added, and these are $\frac{1}{2}$ in. by $\frac{1}{2}$ in. in section and are glued and screwed at a distance of $\frac{1}{2}$ in. down from the top edge of the case, as seen again in detail in

the enlarged view in Fig. 4. On these fillets will be glued strips of washleather or felt to form a bedding for the sheet of glass, the size of which should be taken direct from the made-up case.

A tight fit should be avoided when fitting the glass, and this is held in place by $\frac{1}{2}$ in. angle beading mitred and glued or screwed in all round. By using screws the beading is readily removed in case the glass should ever become broken and needs replacement.

We have got as far as making the frame and the floor of the top case, and it now remains to add the top frame. The glass top to this upper portion is made in the

form of an open frame. Each side of it is made up of three strips of $\frac{1}{4}$ in. thick wood glued or screwed together. A detailed corner view of the frame is shown in Fig. 4, with an enlarged sectional detail in the circle.

The outside of the frame comes flush with the outside of the display case, see enlarged detail. All three pieces of each side, twelve pieces in all being therefore required, are $\frac{3}{4}$ in. by $\frac{1}{2}$ in. in cross section. The lower member, that resting on the top edge of the case, is plain in section, whereas the middle piece should have its outer edge rounded neatly.

The extreme top member has a chamfer planed along one edge for effect, and to get as full a view of the interior of the display as possible. Cut the mitres carefully at 45 degrees and in gluing the two lower rails together, keep the middle or shaped one $\frac{1}{8}$ in. in from one edge as shown to form, as it were, a rebate for the glass. Test the mitres before actually gluing up the four sections of the frame.

To hold the frame firmly together four wide flat brass angle plates will be used and they should be held with counter-sunk brass screws to the underside of the frame when this is placed in position on

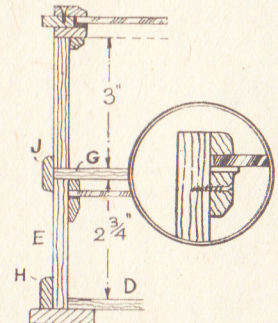


Fig. 4—Section at end

the case. Shallow recesses may be cut in the top surface of the case to receive the plates.

To the inside edges of the glass framing, fillets $\frac{3}{4}$ in. by $\frac{1}{2}$ in. with chamfered edges will be attached to hold the frame properly and rigidly in place, see the enlarged detail Fig. 4. Glass of about 21 oz. will be used for both top and lower case, the top glass again being bedded on either felt or washleather as shown.

The glass and its bedding will be put in the rebate of the frame and the top member then screwed on. This screwing on being again adopted in case the glass requires renewing.

This completes the making of the show cases, which can be lined and finished as previously suggested. To hold the cases together a fillet strip (J) is put round at the junction as seen in Fig. 4. The strips are $\frac{3}{4}$ in. wide and $\frac{1}{2}$ in. thick and they are glued at the angles of the top case and mitred and pinned to it.

Some suggestions for practical and ornamental ORANGE BOX USES

If given a little beauty treatment the humble orange box can be converted into a really useful piece of furniture. When you consider even a modest storage cabinet may cost £3 or £4 in the shops, it is certainly an economical proposition to buy a shilling orange crate from your greengrocer and try your hand at converting it into one or other of the uses described here.

A little paint or varnish stain and odd lengths of brightly coloured material for draping will work wonders. Provided you know the business end of a hammer or screwdriver there is no need to worry about the carpentry side of the job. Most orange boxes are divided into three compartments, so you will have two useful shelves already in position.

There is just one point to note particularly. The majority of orange boxes have ventilating apertures down each side. If necessary, these could be covered with the wooden slats forming

The dust curtain hangs from a length of stiff wire or tape held in place by two $\frac{1}{2}$ in. screw-eyes (seen in Fig. 1). Make a narrow hem at the top of the curtain through which to thread the tape so the draping may be pushed aside when using the cabinet. A vase of flowers on the top of the box will add a finishing touch.

A Wall Cabinet

If you propose making the hanging book-case (see Fig. 2) paint and stain as previously described. As the box will hang in a horizontal position, the sliding curtain must be fitted the long way.

Picture wire is the best means of suspension and should be secured to two 1 in. screw-eyes. These should be screwed about 3 ins. in from the back of the box in order the bookcase shall hang flush with the wall. You may have to plug the wall so a 4 in. wire nail can be driven firmly home on which to hang the case. A useful wall rack for kitchen

material. Brass or leather-headed furniture tacks could be used for fixing the covering material around the seat, and a neater finish is achieved if you use an edging of $\frac{1}{2}$ in. upholsterer's braid (from ironmongers and furniture shops).

A sliding curtain, fitted as for the hanging book-case, should be added, although you may prefer to drape the four sides completely if you have enough material. The three compartments will be useful for housing slippers, knitting materials, books and so on.

Vegetables Holder

A vegetable rack (see Fig. 4) will prove a boon in the kitchen. The crate is canted at an angle of approximately 45 degrees and kept in that position by two strips of wood (each about 12 ins. by 6 ins) screwed or nailed in place at either end as shown, which act as feet.

The three compartments will prove very handy—you could store potatoes in

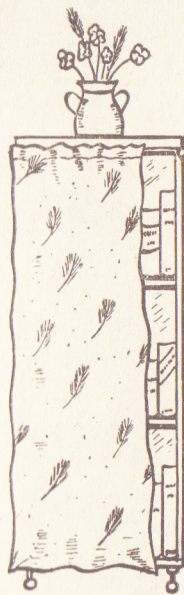


Fig. 1—A bookcase

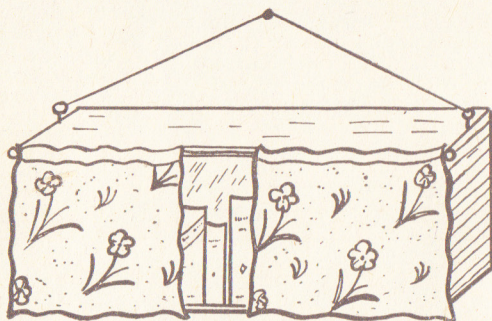


Fig. 2—A suitable hanging cabinet



Fig. 3—A fireside seat with curtained front

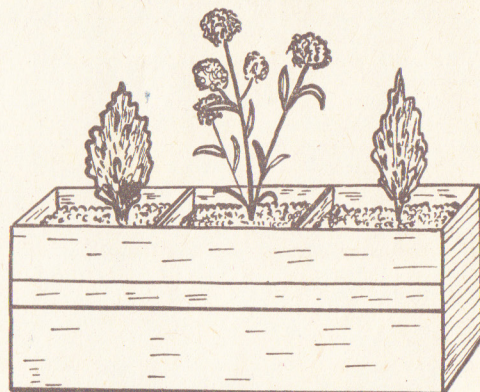


Fig. 5—As a box for small shrubs or plants

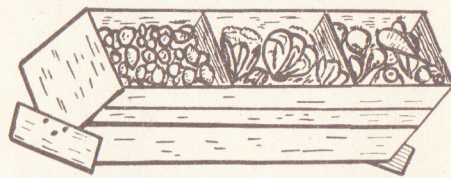


Fig. 4—Tilted to form a vegetable holder

the lid or fourth side of the box, which could be nailed with $\frac{1}{2}$ in. tacks to cover the apertures. Although this would not be essential in the case of the bookcase, it would be necessary for the vegetable rack to prevent loose dirt from falling on to the floor.

A Book-case

Here are a few hints on the articles illustrated. For an upright bookcase or storage cabinet (see Fig. 1), the inside could be painted cream and the outside given a coat of light or dark oak varnish stain. Four cotton reels could be screwed underneath to act as legs, or you may prefer to use small castors.

materials could be made on similar lines, the front curtain being optional.

A fireside seat is seen at Fig. 3. The most important job here is to strengthen the upper side of the box which forms the seat, as the thin slats of the crate would not stand up to their job. Two strips of floor board cut to the correct length and nailed in place will solve the problem.

To pad the seat, first tack any odd material loosely over the top of the box, leaving one end open. This will form a pocket which may be stuffed with kapok or flock. Distribute the padding material evenly, then tack down the open end.

Cover the padded seat with colourful

one, greens in the second and roots in the third.

A garden box for plants and shrubs such as shown at Fig. 5 might well occupy a corner of the lawn or stand beneath a window. First paint the box green or any colour that takes your fancy. Fill each compartment with a mixture of earth and leaf mould to within an inch or two of the top. It may be necessary to make a few drainage holes in the bottom of the box (a brace and bit or a red-hot poker will soon do this). Your box will be ideal for small shrubs or geraniums.

(220)

If you are wanting pets then you should know ALL ABOUT GUINEA PIGS

HAVE you ever seen a cavy? Of course you have, although you do not recognise its name. It is another name for the guinea pig. If you go to the Zoo you will see an enormous guinea pig called the Patagonian Cavy, which is the wild relative of our pet guinea pigs and comes from South America.

If you visit a fur and feather show you will see lots of different kinds of pet guinea pigs and one with beautiful rosettes in its fur is called the Abyssinian Guinea Pig. There is another kind which has very smooth fur, almost silky, with a large head. The guinea pig you may see with very long silky fur which needs brushing and combing is called the Peruvian kind.

An Open Enclosure

Now how would you look after one of these beauties if you had it for a pet? Do not keep them always shut up in a little hutch. Guinea pigs enjoy an outing on the grass and the author used to let his have a small portion of the garden lawn enclosed with mesh wire during the summer. They will not burrow under the ground like rabbits.

Nowadays it is not so easy to have oats and bran with which to feed them three times a day, but fortunately our little pets eat a very varied bill of fare. If you have an allotment or garden you will often have some old beetroots and turnips to chop up for your pets. Also some old cabbage leaves which are thrown away by your mother when preparing dinner, and they will like the tops and the peelings from the carrots.

Grass and Plants

Fresh sweet grass provided by the lawn mower is another item on the menu, providing it is not given too often. Whenever you go for a walk in the country lanes and on the common, take a bag with you and fill it up with dandelion leaves, groundsel plants, the broad leaves of the plantain and any other soft plant growth. But do not give your pets any rhubarb leaves or any tea leaves.

Cleaning

Straw or hay will make the bedding for your guinea pig hutch, but be sure to shake it out once a day to keep it sweet. In the hot weather of summer the hutch will not need so much litter as in winter. Once a week, on a fine day, put your guinea pigs into the play pen on the lawn while you clean out the hutch.

This means that you will scrape it out first with a piece of blunt metal or slate, then scrub it out with very hot water and soda, and then rub it out well with a handful of dry hay or straw. Make sure it is thoroughly dry before you put the guinea pigs back into it.

It is better that you should feed your guinea pigs and clean out their hutches yourself for guinea pigs are usually very shy and timid with strangers. They soon trust the person who cares for them, however, and in this way you will make the best of pets.

Handling

If you are careful you should lift up and hold the guinea pigs in your hands. Talk to them and stroke their fur each time you visit the hutch, for this is the only way to make them really tame. If you only look at them they run away to the other side of the hutch.

Another thing to do for them is to have an old chair, or a small table, or a large, upturned box which you will use regularly as a 'grooming table'. Every time you brush your guinea pig's coat (this should take place once or twice

each week) you must lift him out of the hutch and place him on the grooming table. Stroke him well, and if you have handled him often before he will not be frightened and he will not try to run away.

You should scratch the guinea pig on the top of his head when you wish to make friends with him. The way to lift him is to place both hands around his chest so your two thumbs meet across his back. Please do not lift him by the back of the neck.

Young Ones

If you have any baby guinea pigs, do not handle them until they are six weeks old. You can lift your pets out on to the grooming table when you want to show them to your friends; but do not do this until they have first got used to your handling them. (251)

Provide a Bird Table—

AHARD winter entails suffering for our little feathered friends, deprived of their usual sources of food. Why not knock up a bird table—a practical good-looking affair—rather than scatter crumbs, etc., in a haphazard way on the ground?

Apart from humane considerations, considerable interest is afforded by the antics of our feathered guests, specially the tits, who perform quaint acrobatics whilst pecking at partially cracked nuts hung on strings. In the country a great number of different species will be noted, even to occasional rarities, whilst even in the heart of a big city robins, tits, thrushes and others will gather—besides the inevitable sparrows.

A Suitable Type

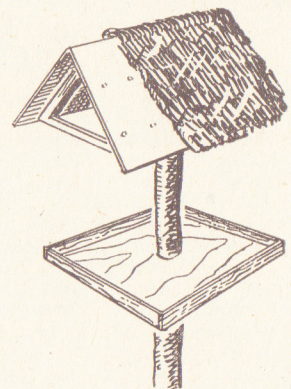
The accompanying sketch gives a good idea of the general proportions of a suitable 'table' for a garden or camp-ground. The little details you can work out for yourself. The idea of a roof, of course, is to keep the food dry, whilst the rim, made removable for easy cleaning, prevents the food from being blown away.

The roof is made of two pieces of wood fitted to a couple of triangular frames, and is afterwards covered with straw thatch, or cedar shingles if you can get them. It will be noted that the supporting post can either be sunk firmly in the ground, or fitted with a base, so that it is portable. Precautions should be taken with regard to neighbouring cats!

As a very rough guide we may say that the table itself can be 18ins. square and 5ft. from the ground. The roof starts at 12ins. from the table and is made of 3in.

wood with holes drilled for the thatch, the latter being about 1in. thick. The roof is about 2ft. long, and supported on a triangular framework of 1in. by 1/2in. battens.

Oak is good stuff to use, but in any case all wood must be well painted. Practically anything will be welcome for the birds—crumbs, pieces of bacon rind, etc.—whilst a warm potato makes a treat. A little jar of water should stand



on the table and be changed when it gets frozen.

Many of our readers will doubtless regret that they have no garden suitable for such an erection. Almost as good is to make a slightly smaller version of the table and roof part (with a conical roof if you can manage it) and support the contraption from a wooden arm about a yard long, fixed to a window frame. A close-up view of the birds is thus obtained from the window.

You can get grand winter sport in FISHING FOR DACE

THE dace is a grand fish for sport, and appeals to both young and older anglers. They are river-haunting fish, and seldom found in still and stagnant water like ponds. Dace prefer quick streams, scours, eddies, currents, gravelly shallows, runs below a weir, and sandy bottoms in sharp, clear brooks. Such rivers as Thames, Trent, Kennet, Hampshire Avon, and most lesser rivers that hold roach, will also provide a few dace.

Dace have been taken weighing as much as 1lb. to 1½lbs., but the general run of these fish is about 6 to 8ozs., and such fish, though small, give excellent sport.

Rod and Hooks

During autumn and winter dace are at their best. You need a light cane rod of 10ft. or so in length, an easy-running reel, a fine plaited silk line, and a Nylon cast of 3x thickness. Hooks—tied to short gut—should be No. 12 or 14; very small hooks are not recommended. You miss more 'bites' with tiny hooks than with big hooks.

The best method in autumn for catching dace is 'trotting' a bait down a long 'swim'. That is, letting the current carry the float and baited tackle down river, either by paying out line from the reel with your left hand, or allowing the current to draw the line direct off the reel. When your float has travelled say, twenty yards or so down-stream, withdraw and recast.

The Line to Use

The line must be well greased with lineflote, Mucilin, or Vaseline so it floats well on the surface. The float is a swan quill or a porcupine quill, and the gut cast must be shot so that just the tip of the float shows above the water.

As the baited tackle and float travels down the 'swim' you try to keep the line between float and rod-tip as taut as possible, quietly checking the float from time to time, so the baited hook keeps a little in front. By doing this the bait is presented to the dace in a natural manner. There is thus no drag on the line, and striking is rendered cleaner and easier.

Bait

Baits are many—caddis grubs, maggots, small red worms, paste, breadcrumb, pearl barley, wasp grubs, and hemp. When fishing with maggot on the hook you should ground-bait with small maggots, throwing in a thimbleful from time to time, a little upstream so the current will carry them down into the place where you are fishing.

When fishing deeper places a good plan is to try what old anglers call 'bag-baiting'—that is, put your groundbait in a small paper bag, weighted with a

pebble. Twist the top of the bag round tightly, pierce one or two small holes in the sides, and cast into the 'swim'. The maggots will wriggle out of the holes and float away down stream, thus attracting the dace. Until the bag disintegrates—as it may do—the wrigglers will keep working their way out, and maintain a steady flow of ground-baiting. Some anglers use pieces of old lace curtaining instead of a paper bag, for this purpose.

Other ground-baits include bread and bran, which can be used plain, or mixed

with maggots. Balls of stiff bread and bran stuffed with a few maggots, and cast into the 'swim', are effective where the stream is a trifle fast.

Raking

Another way of attracting dace is by raking the bed of the river. You can do this with a long-handled rake. If fishing from a punt or moored boat get a friend to accompany you, and sit in the stern and ply the rake. This disturbs the bed

(Continued foot of page 43)

Simple Wire Straightener

WHEN wire is bought by the coil, and often it is very tightly wound, it can be most annoying trying to get it straightened out in a satisfactory manner. Hammering is not to be recommended, as it badly dents the wire, besides making it a very tedious task, especially if a good length is needed.

The simple little tool described and illustrated in Fig. 1 on this page will make the task of straightening wire a very easy one. At the same time it adds to the quality of the wire by hardening it considerably.

Different Sizes

The handyman who does a good bit of wirework will find that two or three of these tools made in different sizes will not only save a lot of time but will turn out a really first class job.

The tool is a simple affair and consists of two blocks of wood, one of which holds a zig-zag row of pins through which the wire to be straightened is pulled. The other block of wood acts as a cap to keep the wire in position.

The actual size of the blocks will depend on the thickness of the wire to be dealt with. A useful size for general work would be about 4½ins. long, 1½ins. wide and ¾in. thick: the cap being made to the same size. Beech, walnut or some such hardwood is the best material to use for both the block and cap.

Panel Pins

The pins used for this block are 2in. panel pins, having a diameter of ⅜in. and with the heads cut off to length after they were driven in. Draw a line down the centre of the block and place the pins ⅜in. apart alternatively on either side of the line. For fine or medium sized wire these pins should be very nearly in a straight line—the finer

the wire the straighter the line of pins. Fig. 2 shows the layout for this.

The cap should be drilled to slide over the tops of the pins, making it a fairly easy fit. It is meant to keep the wire flat and also to keep the pins from bending as the wire is pulled through.

How to Operate

The best method of using this tool is to place the end of the coil of wire in a vice, as shown in Fig. 3. Then thread the wire between the pins, as in Fig. 1, place the cap on and draw slowly along the wire starting from the vice end.

It is usually only necessary to pull the tool along the wire once, but if this does not straighten it sufficiently the process can be repeated.

Best results are obtained when the pins are highly polished, so it will pay when making up the tool to see that they are smooth. Use fine emery paper and then burnish the pins by rubbing with a piece of round hard steel such as a knitting needle. (273)

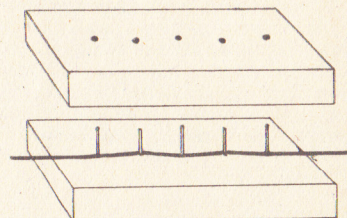


Fig. 1—The holed board and when complete

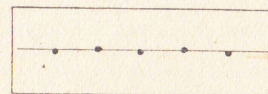


Fig. 2—Placing the holes

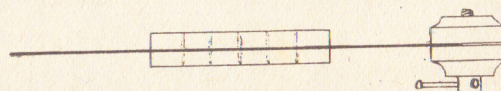


Fig. 3—Plan view showing wire held in vice and in the tool

Novel table decoration easily obtained by **GROWING MINIATURE TREES**

ACORNS will soon be dropping from the oak trees, and many readers may care to consider the profitable hobby of growing miniature oak trees in bowls, on the Japanese system, either for their enjoyment or for sale.

It is a hobby that requires patience, of course, since Nature cannot be hurried. Three years or more are required before the first trees are saleable, but if one increases the stock every year, one has a hobby that is really an investment. Miniature oak trees cannot be mass-produced in a factory to satisfy a passing craze, nor can some imitator 'cash in' overnight on your hobby. You are fairly safe from competition.

Tiny Oaks

As the picture suggests, miniature oak trees are perfect replicas in miniature, fully alive, of the grand old giants of the woodlands. Instead of growing tall and requiring tons of earth for anchorage and much space for development, they flourish in an ordinary bulb bowl.

The first step is to plant some acorns, either in a corner of the garden or in pots or seed boxes and wait for them to come up. When the seedling is big enough to handle, it is transplanted into a small pot containing a mixture of half ordinary garden soil and half sand.

The pots are then buried up to their rims in the garden soil (or even in a window box filled with soil). They are then left to complete a year's growth, i.e., until the leaves fall.

The stem is then gently manipulated into a decorative S shaped kink, and kept

thus by tying, with raffia, to a stick which is pegged into the pot. Thus confined, the little tree is left to grow for another year, still in the same small pot. At the end of the second season the stick and raffia may be cut away. The little tree is permanently kinked.

In a Bulb Bowl

The little tree is then transplanted to a bulb bowl, its final home. Arrangements should be made for draining, but the soil should not be rich. It is the fact that the pot is root-bound that makes the tree grow in miniature.

In early summer, the young shoots are pinched back to prevent further growth, and during summer the plants should be watered sufficiently but not too generously. In winter, very little water is needed, and if the soil is covered with moss it will prevent too rapid evaporation of moisture. A very little manure (liquid, perhaps) can be given during the growing season.

Although we have spoken of the miniature tree's final home, it will be found that every five years or so, the plants benefit from a repotting. This does not necessarily mean to a larger pot. Such is needed only if inevitable. When the trees are repotted, about a third of the old soil is removed and replaced by new. The roots will be very pot-bound and old earth has to be prised very carefully from them with a skewer, etc.

For those who want rather quicker results though in a less substantial form, the following can be recommended. Scrape all the pulp from a large cut orange or grapefruit, fill the skin with soil and plant an acorn in it. Keep the



soil at room temperature and rather moist, and before long a young plant will appear.

As soon as any shoots grow through the rind, cut them off and repeat every time they do so. This, too, will result in a dwarf tree, only some 6 ins. or so in height.

Suitable Trees

A great many other trees can be grown in miniature, though the most suitable appear to be those which have a long life—oak, yew, pine, chestnut, cypress, beech, maple, etc. But cherry, apple, pear, and so on may be grown from pips and stones.

Unless one has 'green fingers', it is not particularly easy to raise plants of pine, cypress and yew, and one-year plants may have to be obtained from a seedsman or nurseryman. Acorns and chestnuts, however, are quite easy to raise.

Dace Fishing—(Continued from page 42)

of the stream, dislodging all kinds of food, bringing it down with mud and sand, colouring the water and bringing the fish 'on the feed'. Sometimes big lots of good dace are taken by such procedure, the angler 'swimming the stream' with his baited tackle travelling down the muddied water.

Seasonal Differences

Sometimes, in summer, you can catch dace on the artificial fly, but in autumn you will do better with maggot bait. In later autumn—and later on—when rivers are full and running a strong current, it is better to try out the eddies and slacks, where the water is somewhat deeper than usual, and fish well on the bottom, holding the float some distance below where you sit, right on the edge of the eddy, using small red worms as bait, or maggots.

Dace seem to delight in the swirly eddies of a scour below a weir. You will doubtless be surprised at the display dace—if about half-a-pound or over—will give when hooked in such a water.

We have known them to fight, as valiantly as trout, size for size. Here, again, a red worm will be found a taking bait in late autumn and winter.

Dace collect in schools, for they are gregarious, like roach. They move in the water with swift darting movements, and in olden times they were referred to as 'river swallows' or as the 'dart'. General habits are closely akin to roach and they frequently haunt the roach 'swims'. After October dace show a tendency to retreat to deep waters, slacks, and quiet eddies; earlier in the season they prefer the quick, shallow runs.

Different from Chub

Dace are often confused with chub by the beginner. But note that the anal fin of the chub is longer and has a rounded edge. The anal fin of the dace is a trifle broader and is hollowed out on the edge, or concave in shape. The head of the chub is more 'chubby' and blunt. Altogether the dace is more slender and graceful than the chub. To identify

readily, remember—in the chub the anal fin is rounded or convex; in the dace, hollowed or concave.

Speed Needed

Dace 'bite' quickly. The float is 'banged' under in a flash, no preliminary jerking or bobbing as when perch bite at the bait. Thus, the 'strike' must be almost instantaneous. If you can 'strike' as the float goes down all the more likely are you to hook the fish.

However, do not be discouraged if you miss quite a lot of 'bites' when dace-fishing; even experienced anglers often fail to hook the fish. Practice will help you to time your 'striking', but dace bites are tricky. It is a case of 'tip-and-run' with the sprightly and lively dace, and you simply must be extra quick on the strike.

Anyway, dace are well worth fishing for. You will find them excellent fish to try your 'prentice hand on—and when you have been angling fifty years or more!

An easily made delight for a youngster is A TOY MODEL SHOP

MOST youngsters like to play at keeping shop so the model one illustrated may make a welcome gift. It is so designed that the child can stand behind the counter instead of on one side, as was the case in the older pattern of stores. For construction the reader can use $\frac{3}{4}$ in. deal for most of the work, or $\frac{1}{2}$ in. fretwood for part, with deal, of the thickness stated in the article, for the remainder.

Fig. 1 is a front elevation, Fig. 2 a side section, with dimensions. For economy's sake it is, perhaps, better to use the $\frac{3}{4}$ in. deal mentioned for the shop sides and top cross piece. Cut these to dimensions given, and round off the rear top corners. At the spots where the counter will be nailed later, square lines across as a guide, to get the counter level, and not on the skew.

The Front

From $\frac{1}{2}$ in. *fretwood (or deal) cut the counter and front of the shop. The latter is glued and nailed across, then the counter nailed to the front and to the sides. See this counter lies truly along the pencil lines. Across the top nail the 2 in. wide strip shown; deal, $\frac{3}{4}$ in. thick for this part. Between the counter and top strip, two vertical 1 in. wide strips of the fretwood are to be nailed. Here again guiding lines should be squared

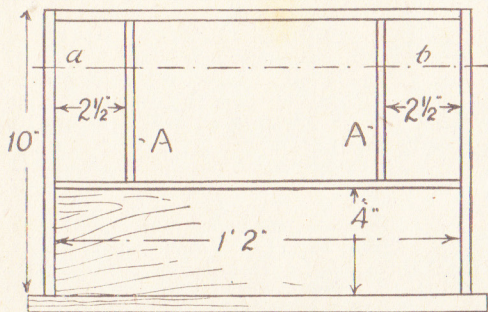


Fig. 1—Plan of the front

across to ensure their accurate positioning.

The baseboard can now be cut. The wood for this is a bit stouter than the rest, say, $\frac{1}{2}$ in. or more according to what is available. It may be mentioned at this stage, that an odd length of $\frac{1}{2}$ in. planed matchboarding, which finishes $\frac{3}{4}$ in. thick, could usefully be employed for the sides and other parts, excluding the baseboard, if available. A secondhand piece would serve equally as well as a new one. This completes the carcass.

Inside the shop a set of shelves should be made and set up each side. These are seen in Fig. 2, and consist of two pieces (B) fixed to a pair of vertical uprights. The width of top shelf (B) is just 2 $\frac{1}{2}$ ins., so that its further end can fit between the vertical front strips. (A).

The rest are cut from 2 in. wide wood.

Cut the side parts, then the middle shelf to height and width in Fig. 2, and glue each side to butt up against the counter. The top shelf (B) is cut 7 ins. long, but is to be nailed on top later.

The spaces between the sides of the shop and strips (A) represent the shop windows. To finish the front of the shop and also provide a rebate for the glass to cover the windows, cut from $\frac{1}{2}$ in. fretwood two of (C), Fig. 4. It will be seen that a 7 in. by 14 in. panel of the wood will provide these and leave a bit over. Now glue and nail these parts over the window openings.

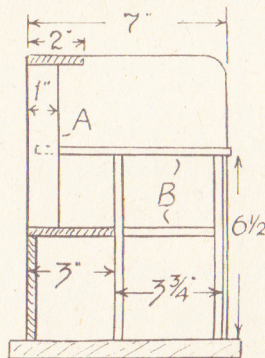


Fig. 2—End section

While the glue is drying, cut two pieces of thin glass or clear plastic to fit the window openings. Fit in position, then nail top shelf (B) in place, with its further end touching the glass to prevent the latter falling out. The transverse section of the shop, across line (a-b) (half) as shown at Fig. 3, will explain the above and make all clear.

To finish off the constructional work, a fascia board will be needed. This should be cut from $\frac{1}{2}$ in. wood or nearabouts, to shape at (D) Fig. 4, half length only being given. Glue it to the top of the shop, and stiffen it a little with small angle

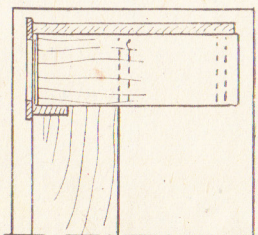
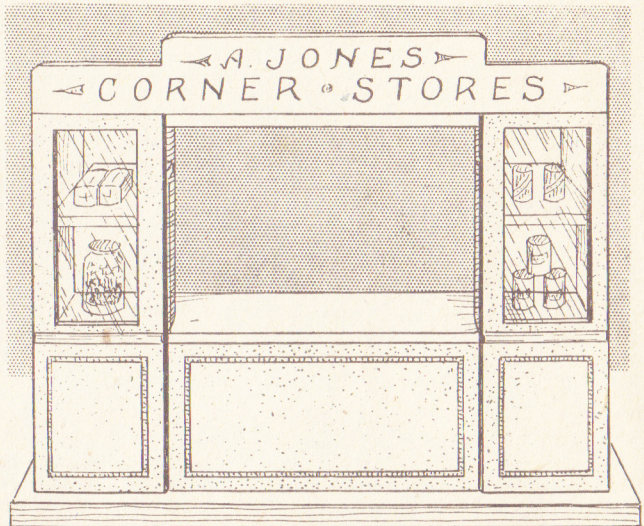


Fig. 3—Half section of top



brackets, glued behind in the angle.

The whole work should now be well cleaned up with glasspaper, then painted. Several spare bits of wood will be left, and from some of these, two strips, $\frac{1}{4}$ in. wide, could be planed half round and glued across parts (C) just under the window openings, where shown by the dotted lines.

Painting

Painting can be dealt with, naturally, at the discretion of the reader. A more professional effect is obtained by painting the name, etc., on the fascia board, not a difficult job if a fine brush is used, accompanied by a little patience. Simulated panelling in the front, by painting in the lines shown, will also improve the job. The counter and shelves are better left plain.

For stocking the shop, small bottles of sweets could be obtained for a commencement. Mock packages are easily made up from squares and rectangles of wood scrap, covered with paper. Tins from bits of dowel rod, covered with neatly inscribed labels.

A small pair of scales will also be needed, but readers will, most likely, buy this ready made.

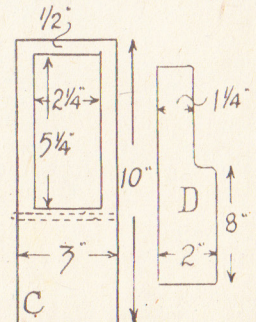


Fig. 4—Windows and fascia

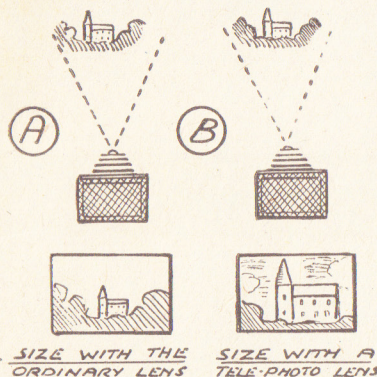
A PHOTOGRAPHIC ALPHABET

T for—

Tele-photo Lens

WHEN you take a snap of a distant scene the items come out very small, perhaps too small even to enlarge well. At times the trouble can be overcome by getting nearer in—but it is not always possible to do this, as, say, when snapping birds in flight, a yacht race some distance from land, or even a cricket incident from the boundary line. If, however, you were to fit a telescope to your camera quite big images could be obtained from these removed positions and photographs have actually been taken through field glasses and telescopes. But such an arrangement is hard to fit up and here is where the tele-photo lens comes in, for it gives a telescopic effect in a lens that is no bigger than an ordinary camera lens.

The tele-photo lens can be a complete



unit in itself, which replaces the camera optic, or it can be an attachment to go in front of the ordinary lens. For simple cameras in which the lenses are fixed, the attachment idea is always used.

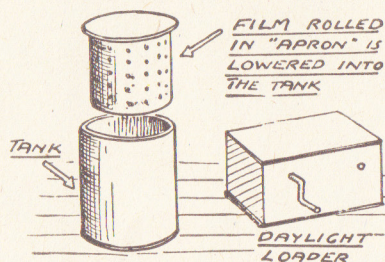
As explained in an earlier paragraph the size of the image on the film depends on the focal length of the lens. The longer the focal length the bigger the image. A tele-photo lens, therefore, has the effect of giving a longer focal length than that of the lens fitted to the camera in the usual way.

Tank Development

THERE are two ways of developing a film—either by using an open dish or by tank. In the first case the film is held by its ends and run through the developer by dropping first one hand and then the other, while in the second it is placed in a light-tight container with the solution for a predetermined time. In the dish method you can see the pictures coming up by means of the red light in which you work, and so observe

when development is complete, but in the second case correct development is judged entirely by the length of time the film is in the tank.

A tank has many advantages and a great number are now used. No dark-room is required with most kinds, it being possible to load the film into the container in ordinary daylight.



With a tank comes a chart which gives exactly how many minutes to leave the film developing—this generally being worked out against the temperature of the solution. When development is complete a cap is unscrewed and the developer poured out, following which the hypo fixer is put in. Everything is now left for a time and then the film is removed, when it is found to be fully developed and fixed.

Many workers contend that a tank gives the more perfect negatives as it is much easier to tell by the 'time and temperature' calculations just what is perfect development than by visual observation in a dim red light. Both methods, however, have their advantages.

Toning Prints

MANY prints look better if changed from black and white to a pleasing brown (sepia). The process known as 'toning' is not hard, and the two solutions necessary can both be obtained in tabloid form from any photographic chemist or dealer. The first solution 'bleaches' the picture, that is makes it almost disappear, but the second brings it back dark again, but in the new lively.

Prints that you intend to tone must be well washed, as if all the hypo is not removed there will be areas of lighter or darker brown, which can spoil the whole effect.

A simple way of toning prints brown is to mix a solution of ordinary hypo with a little alum. This is placed in a metal container over a slow heat, say, a low gas ring, and the prints are placed in one at a time. As the temperature rises, the prints, it will be found, change from black and white to sepia. As the print must be kept on the move and as the

solution gets very hot, a pair of forceps is necessary to work the process well.

Prints that you intend to colour should always be toned to a sepia tint first and this is another reason why the art of simple toning should be mastered, for sooner or later everyone likes to try their hand at colouring.

U for—

Under-development

THIS is a negative trouble you should be able to recognise from under-exposure. With the latter it means that the lens was not left open long enough and consequently the light did not act for a sufficient space of time on the sensitive emulsion of the film. In the first case, however, the light acted for the correct period but the process of bringing out the pictures (development) was cut too short.

With under-development, therefore, we have the usual detail of a good negative present but it is all too thin and transparent. This means that the print will be flat and lifeless.

With under-exposure, however, the highlights in the subject—that is the black areas in the negative—are heavy and dense, but there is no all-over detail. The shadows, that is the thinner areas of the negative, are devoid of detail, often, in fact, being just clear gelatine.

V for—

View Meter

THIS is a very useful photographic accessory and is made up of a frame, either the exact size of your film or a proportionate size, and a small pin-hole 'eye piece' set a little distance from it.

By putting the pin-hole up to the eye it will be found that both the frame and view beyond are in sharp focus. This would not be so if the eye-hole was big, when the frame would be fuzzy.

The frame is thus, as it were, laid over the view and as it takes in the same amount of country that your film will, it is easy to judge the best composition for a picture, and whether this or that item improves or spoils the general effect.

A view meter is readily made, a simple one being merely a flat strip of card turned up to right angles at the ends—a distance apart equal to the depth of the camera. In the one 'turn up' a frame the size of the film is cut and in the other the eye pin-hole agreeing with the centre of the frame.

This hole is best made by touching the card with the end of a red-hot knitting needle, which makes the aperture cleaner than boring does. If the frame is smaller than your film size, then the distance from eye-hole to frame must be shorter in the same proportion. Paint the inside of the card a matt black.

The advantage of a view meter over a view finder for closely studying a subject is that everything is seen full size.

(To be Continued)

THREE SIMPLE HOME GADGETS

If the lady is not lucky enough to have a full-sized ironing board for skirts and sleeves this simple adaption should be welcome in any home. The handyman should have no difficulty in making it.

The ironing board is 24ins. long and 4ins. wide. The wood is 1in. thick and must be well glasspapered and rounded at the corners. It can be covered with a

Space is often limited, but it is handy to be able to have a small rail for a few things which will fix on the edge of a shelf such as shown at Fig. 2. This can always be taken down when not in use. The two ends are made from $\frac{1}{2}$ in. plywood and cut to take three $\frac{3}{16}$ in. dowel rods which are screwed in at intervals of 2ins. The design is such that the supports slide on to the edge of the shelf and the

weight of the hanging article keeps it in position.

A tray for the sick room (see Fig. 3) or for those who indulge in breakfast in bed is handy when it can be stood up a bit and not flat on the bed. Take an ordinary tray and measure some plywood to the same width as the narrow part of the tray. Take out an arched shaped section. Clean off well to prevent damage to

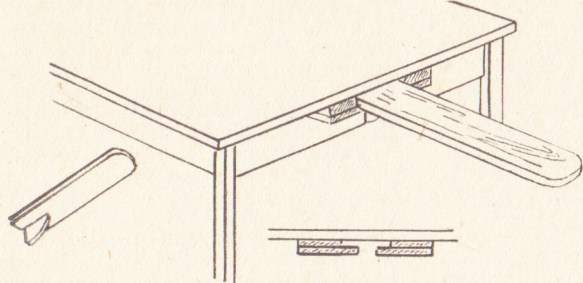


Fig. 4—A spare shelf

piece of old blanket or cloth. The idea is to fix it to the ordinary whitewood kitchen or scullery table.

Now make the two underside bracket supports. The brackets measure 5ins. long and 1 $\frac{1}{2}$ ins. square. A recess is cut in each one $\frac{3}{4}$ in. by 1 $\frac{1}{2}$ ins. and then they are screwed firmly into position. They should be so fixed that the board can slide into them. Keep the board in position by the rounded wooden bracket (Fig. 1) and this should be as deep as you can make it to take the pressure.

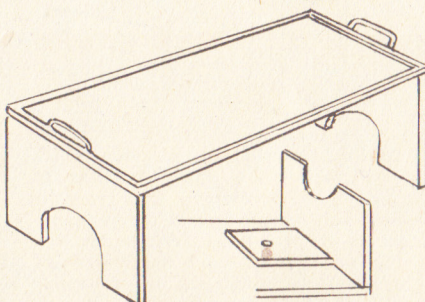


Fig. 3—A bed-table tray

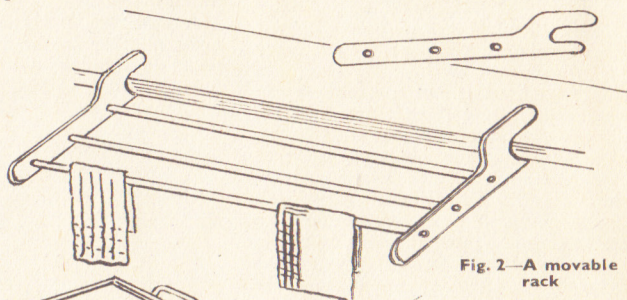


Fig. 2—A movable rack

bedclothes when in use.

Fix the two panels on with small neat hinges so that the flaps fold inwards. Fasten two blocks on underneath with screws so that they can be screwed round to hold the flaps up but without jamming. This tray will also be found very handy to anybody who cannot stoop down too much and also when you are in the garden having tea. It saves putting it right flat on the ground. (214)

BE TALLER

I Guarantee to increase your height in 12 days or return your money. New gland and spinal discovery increases height 2 to 5 inches.

'I have gained 4 $\frac{1}{2}$ inches in height and feel fresher first thing in the morning. My weight increased from 9-stone 4-lb. to 10-stone 3 $\frac{1}{2}$ -lb.'—P.D., Witham. 'Since taking your Course I have increased in stature from 5 feet 1 inch to 5 feet 4 inches, a matter of 3 inches'.—H.G., Chesterfield. 'My increase is 2 inches and I really do feel ALIVE'.—E.T.

Guaranteed harmless. Full Course 10/- post free, Air Mail 14/-. Details free for 1d. stamp. Send under plain cover.

J. H. MORLEY

(H.83), TERRY HOUSE, NAPHILL, HIGH WYCOMBE, ENGLAND
Established 1936

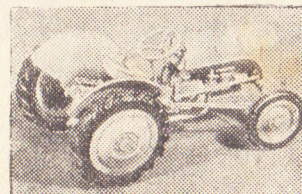


THE BOLSTER HOME WATCH AND CLOCK REPAIR OUTFIT

These precision jewellers instruments, include watch-maker's magnifying eyeglass, finest watch tweezers, set watchmaker's screwdrivers, watch and clock oil, oilers, dusting powder, clock brush, plus illustrated instructional manual for the amateur. In container 12/9 post free.

Senior Outfit includes everything above, plus watch jewels, luminous compounds, dial renewer, jewellers rouge, explanatory book. Price 21/- post free.

BOLSTER INSTRUMENTS, (Dept. H. W.), 5a Station Parade, Ashford, Middx



MURRAY HILL & CO., BEDFORD SQUARE, SIDMOUTH, DEVON

BOYS!!! BOYS!!! BOYS!!!
With the aid of our amazing assembly outfit you can quickly and easily assemble this superb scale model of the famous 'Ferguson' tractor. All parts supplied in finished state. All plastic construction, real rubber trakgrip tyres. Can be dismantled and re-assembled with ease. Send P.O. today for 7/6 post free.

YOU CAN BECOME A HANDICRAFTS INSTRUCTOR

Experience not essential

Men who enjoy making things in wood or metal can turn their hobby into a permanent and interesting Career. Short hours, long holidays, and security in a job you would really enjoy, can be yours if you become a Handicrafts instructor. Let us send details of the easiest and quickest way to get the necessary qualification.

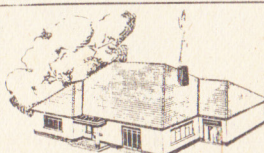
**We definitely guarantee
"NO PASS—NO FEE"**

If you would like to know about our unique method of preparing you for one of these appointments, write to-day, and we will send you our informative 176 page Handbook—free and without obligation. Mark your letters "Handicrafts Instructor."

**BRITISH INSTITUTE OF
ENGINEERING TECHNOLOGY**

595 Shakespeare House
Stratford Place, London, W.1

BIET



TURN YOUR SPARE-TIME INTO CASH

Men and women wanted to
make Bennett Model
Bungalows at home.

Fascinating, simple, well paid work

No selling involved.

Send penny stamped, addressed envelope for full details.

**BENNETT MODELS,
137, Grays Inn Road, London, W.C.1**

HOBBIES BRITISH FRETSAW BLADES

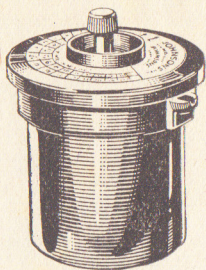
YELLOW LABEL 1/2 per doz. 10/6 gross
BLUE LABEL 1 1/2 per doz. 13/6 gross

From Hobbies Branches or by post (2 1/2d. extra) from Hobbies Ltd., Dereham, Norfolk

A NOTE TO AMATEUR PHOTOGRAPHERS

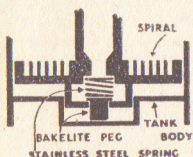
The old-fashioned method of developing roll films by splashing them up and down in a dish is out. The modern method, used by amateur and professional workers alike, is to employ a daylight developing tank.

JOHNSON J-20 TANK



A most economical little tank specially designed for the popular size 20 film (2½ ins. wide). The one-piece spiral film-holder is easily loaded in the dark, the lid is replaced and then developing and fixing can be carried out in daylight. Only 10½ ozs. of the developer are required to fill the tank.

The lid is triple light-trapped and has an extra deep, built-in funnel for easy filling. An ivory rotating calculator gives the correct developing time for most popular films, when using Johnson developers. A pouring lip on the side of the body for emptying.



All the latest J-20 developing tanks are fitted with the new Two-way agitation movement which ensures even development

PRICE 22/6

Your dealer will let you examine one and explain how it works.

JOHNSONS OF HENDON

HAND PLANING FROM 'A' TO 'Z'

Revised, Enlarged Edition of

'PLANE CRAFT'

The Craftsman's workshop companion and an invaluable instruction book for apprentice or beginner. Many thousands sold since 1st edition in 1934. An ideal Christmas Gift.

20 CHAPTERS!

278 ILLUSTRATIONS!

covering

The History of the plane; plane adjustment, grinding and whetting the iron; holding the plane; planing difficulties solved; fundamentals of planing; rabbeting, ploughing; combination, circular, router and multi-planes, spoke-shaves, bench and vice; workshop hints.



Obtainable through tool stockists,

3/6 NET. OR POST FREE 4/1

direct from the publishers:
C. & J. HAMPTON, LTD.,
SHEFFIELD, ENGLAND.

PROFITABLE LEISURE

Everything wanted for Perfect Pastimes for Pleasure and Profit is listed in:

CRAFTWORKER

THE MODERN MAGAZINE OF CRAFTS FOR ALL

- Every kind and type of tool and material is offered in *Craftworker*
- Instructions in all Crafts at Home are published in *Craftworker*
- A Market Section is included in each issue of *Craftworker*

A COMPLETE SERVICE

Specimen Copy 1/2d. from the Publishers

Craftworker (DEPT. H.W.), Broadway, Broadstairs



BRITFIX BALSA CEMENT

★ The ideal transparent cement for Balsa Ply Wood, Hard Woods, and Plastics, combining rapid drying with utmost tenacity.

Remember

STICK BY
BRITFIX

Small Tube
Now
4½d.

Large Tube
7d.

THE HUMBER OIL CO. LTD., HULL

NICOTEXIT

THE GUARANTEED SMOKING DETERRENT

- ★ POSITIVELY STOPS SMOKING IMMEDIATELY and for several hours after each application. Purchase price refunded if it fails to do so.
- ★ ONE BOTTLE IS USUALLY SUFFICIENT to establish control of smoking in any form. It is not poisonous.

Invaluable to all who smoke too much

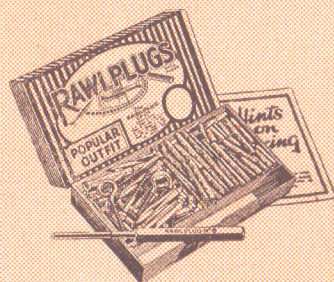
5/6 Per Bottle
Post Free

Obtainable only by post from Sole Concessionaires for Great Britain:—

THE NICOTEXIT COMPANY (Dept. B.6.)
62 High Street, Croydon, Surrey

RAWLPLUG PRODUCTS

INDISPENSABLE
IN THE WORKSHOP
HANDY IN THE HOME



The Rawlplug Popular Outfit costs only 2/6 complete. Larger sizes are obtainable.

Rawlplug Devices include Rawibolts for heavy duty fixings, Rawlanchors and Toggle Bolts for thin or hollow materials and Rawlclips for instant fixing of conduits and cables to girders—a device in fact for every need.

Rawlplug fixing devices and products can be obtained from Ironmongers, Hardware Dealers, Stores or Model Makers Suppliers.

RAWLPLUG FIXING DEVICES AND TOOLS

Whatever your fixing problems, there's a Rawlplug Device that will solve it for you—easily and quickly. Rawlplugs make neat and absolutely firm fixings in any material from brick or tile to stone or slate, with a size for every screw from No. 3 up to 1/2" coach screws. Rawlplug Tools are easy to use and ensure a perfect hole without damage to surrounding surfaces. Other Rawlplug Devices include Rawibolts for heavy duty fixings, Rawlanchors and Toggle Bolts for thin or hollow materials and Rawlclips for instant fixing of conduits and cables to girders—a device in fact for every need.



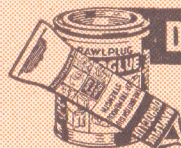
SCRAPER

A remarkably efficient and economical scraper, built to last a lifetime. Gives smooth finish without chatter or scratching. Easy-grip handle made solid with blade carrier in seasoned hardwood, polished and varnished. Total length approx. 6". Fitted renewable 2 1/2" Cadmium Plated Steel Blade, with cutting edge ground like a razor. 3/- each.



DUROFIX

The indispensable adhesive for instant use on crockery, glass, wood, metal, celluloid and the hobbies enthusiast. Instant drying, insulating, waterproof and heatproof. Durofix is grand for repairs to electrical, sports and leather goods. Tubes 9d. and 1/3d. Tins 2/9d. and 7/6d.



DUROGLUE

UNDILUTED ANIMAL GLUE OF INCOMPARABLE STRENGTH

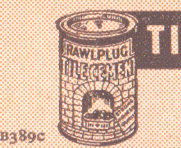
Ready for instant use for the many purposes for which an extra strong glue is needed. Wood, cloth, fabric, felt, leather and any greasy surface can be stuck with Duroglue. Tubes 6d. and 1/- Tins 2/3d. and 3/9d.



PLASTIC WOOD

APPLIED LIKE PUTTY, DRIES LIKE WOOD

Can be cut, planed, polished & painted like wood. Will take nails and screws like wood. It does not blister, crack or decay. Rawlplug Plastic Wood is actually the best quality product of its kind on the market. Tubes 9d. Tins 2/- and 5/-.



TILE CEMENT

Rawlplug Tile Cement is a liquid cement possessing

very strong adhesive qualities. For replacing tiles to walls, floors, fireplaces, hearths, curbs, etc., in kitchens, lavatories, bathrooms, halls, bedrooms, reception rooms, etc. 2/3d. per tin.

THE RAWLPLUG COMPANY LTD. LONDON. S.W.7.

ENGINEERS

★FREE BROCHURES★

Technical training is vital to your success. Our Home Study courses bring you sound, up-to-the-minute instruction.

Write or 'phone for FREE BROCHURES detailing our courses of TECHNICAL TRAINING IN ALL BRANCHES OF ENGINEERING covering such degrees as A.M.I.Mech.E., A.M.I.E.E., A.M.I.P.E., City and Guilds, etc.

'THE COLLEGE BACKED BY AN INDUSTRY'

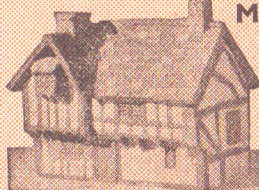
Write to Dept. 31

E.M.I. INSTITUTES

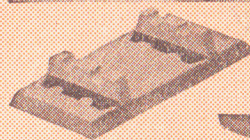
10, PEMBROKE SQUARE, NOTTING HILL GATE, LONDON, W.2. TELEPHONE: DAYSWATER 5131/2

Associated with
"H.M.V."
MARCONIPHONE
COLUMBIA
ETC.

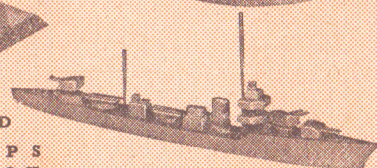
One plastic material
MAKES MANY PERMANENT
MODELS



and utility objects, from simple instructions in illustrated Booklet—please read below.



ONLY 4D
IN STAMPS
BRINGS BOOK



... showing how such models as those above, and many others, can be made, without skill or special tools, from Sankey's PYRUMA Plastic Cement. Ready for immediate use in its plastic state, Pyrama sets or bakes to stone-hardness, and can be painted or enamelled in all colours according to instructions.

Pyrama is inexpensive, and easily obtainable in tins from Ironmongers, Art Material Dealers and Hobbies Shops. Send 4d. in stamps for illustrated Instruction Book.



J.H. SANKEY & SON, LTD.

ILFORD

Est. 1857

ESSEX